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ABSTRACT

This paper addresses the controversy regarding the use of cooperative learning with gifted elementary students, by means of participant observation methodology. The study had three segments: (1) observation of fourth through sixth grade gifted students working in cooperative groups at a pullout site; (2) interviews with students to assess student understanding of and attitudes toward cooperative learning; and (3) interviews with teachers on their use of cooperative learning and perceptions of gifted students' responses. Results supported the use of cooperative learning with gifted students in heterogeneous or homogeneous settings. Observation indicated that students in cooperative learning groups demonstrated the social and academic behaviors cited in cooperative learning literature. No evidence was found indicating lowered academic achievement, though students did work at the pace of their group. Students reported they learned from nongifted group members as well as peers. Recommendations address appropriate and inappropriate uses of cooperative learning with gifted students. Appendices contain a list of characteristics of cooperative learning, a processing sheet to be filled out by the group at the end of the lesson, and individual evaluation sheets. (Contains 29 references.) (DB)

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THE USE OF COOPERATIVE LEARNING WITH ELEMENTARY GIFTED STUDENTS: PRACTICAL AND THEORETICAL IMPLICATIONS

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Cooperative learning is an instructional technique "...designed to engage students actively in the learning process through inquiry and discussion with their peers in small groups" (Davidson & Worsham, 1992, p. xi). This strategy is promoted by a number of educational researchers and practitioners (Johnson, Johnson, & Holubec, 1986; Kagan, 1989; Kohn, 1992; Sapon-Shevin & Schniedewind, 1989-90; Sharan, 1990; Slavin, 1991). (See Appendix A.)

> More than 100 research studies in the last 20 years have found that students learn the material better in this [cooperative learning] kind of structure. In addition, they develop positive social attitudes and behavior. Students learn to get along better with students of other races and ethnic groups, to accept mainstreamed students into the classroom, and to show greater mutual concern for each other. (Krathwohl & Yarger, 1985, p.28)

These advantages to the use of cooperative learning seemed to be accepted without criticism until the late 1980's. At that time advocates of gifted education began to be heard proscribing the use of cooperative learning with gifted students (Feldhusen, 1989, 1990; Gallagher, 1990, 1991; Renzulli & Reis, 1991; Robinson, 1990, 1991; Rogers, 1991a, 1991b; Silverman, 1990, 1991; Vaughn, Feldhusen, & Asher, 1991; Willis, 1990).

Findings of a study by Gallagher, Coleman, and Nelson (1993) summarized the controversy surrounding the use of cooperative learning with gifted students. They used a survey to examine the attitudes of two groups of professionals--teachers and administrators committed to cooperative learning and teachers and administrators working with gifted students--to compare and contrast their perceptions of cooperative learning and its effect on gifted students. The survey "...revealed strongly opposing views from the two groups of educators" (p. 16). The cooperative learning advocates saw this instructional method as a benefit to gifted students. Advocates also found that cooperative learning provides substantial benefits "...necessary to the socio-emotional development of gifted students" (p. 17).

Educators of the gifted in Gallagher, Coleman, and Nelson's report strongly disagreed. They remained unconvinced that cooperative learning benefited gifted students, but feared that administrators and educational policy makers would replace their programs with cooperative learning. They shared fears that teachers will continue to use bright students as "junior teachers" in cooperative groups and that cooperative learning may not provide enough challenge for gifted students.

The views described by Gallagher, Coleman, and Nelson capsulize the body of "conflicting evidence" addressed by this researcher's present study. Opinions and emotional responses to the issue abound, but little research has been conducted regarding the use of cooperative learning with gifted students or feelings of gifted students toward the use of this instructional technique.

This researcher's informal observations during six years of implementing cooperative learning in classrooms have not provided support for arguments precluding the use of this technique with gifted students. Four of those years were in heterogeneous classrooms that included gifted students, and two were in a site where all students were identified as gifted (part of the district's program to meet the needs of its gifted elementary students).

Purpose of the Study

The purpose of the study was to examine the applicability of cooperative learning for elementary gifted students. The procedure focused on two areas. The first was Robinson's (1991) "discovery" that both the research literature and the cooperative learning literature lack information about how academically talented students feel toward cooperative learning. The second focus was the general controversy in the literature about the use of cooperative learning with academically gifted students.

An ethnographic study generally begins with a broad question or "...a fuzzy mess...." (Lundsteen, 1991, p.119). The "fuzzy mess" for this study began as the "hunch" that cooperative learning is a viable practice for use with gifted students in heterogeneous or homogeneous situations. As the study evolved, the hunch never wavered. Research questions gradually evolved from participant observation data to students' and home school teachers' perceptions of the benefits (or lack thereof) of cooperative learning.

Description of the Study

The study was conducted in three segments. In the first part, fourth through sixth grade gifted students were observed working in cooperative groups at the pullout site. In addition to observations, data were collected in the forms of group evaluations at the end of each lesson, individual evaluations at the end of each unit of study, and results of thinking skill lessons. Examination of cooperative learning at a program for the gifted addressed the argument that cooperative learning research has not been conducted on gifted students.

The second part of the study consisted of student interviews conducted at the pullout site and/or the home school. These interviews attempted to assess student understanding of cooperative learning and the degree to which students liked or disliked it.

The third part of the study included teacher interviews conducted at the home school site. This portion was intended to find out if teachers actually used cooperative learning, the extent to which it was used, for which subjects it was used, how students were placed into groups, and teachers' perceptions of how their gifted students worked with non-gifted groupmates.

Data Analysis

Data were analyzed by recording specific instances, forming tentative hypotheses, collecting additional instances, and reaffirming the hypotheses. Analysis continued throughout data collection. Data were compared and contrasted to determine themes and patterns. Corroboration was achieved through several types of triangulation. Participant observation, interviews, and document analysis provided a variety of data collection procedures. Data were collected from a variety of participants in different settings under different conditions. Coding, classifying, and interpreting data were done collaboratively by the researcher and her advisor.

Observations of Students

Students at the pullout site were observed in the researcher's classroom working in cooperative groups of three to six. These gifted students (who scored 129 or above on a standardized ability test) were mixed with regard to gender, race, grade level, and home school. All students in the science investigations classes were participants in four ways: they were observed, they were recorded on video, they completed group and individual evaluation forms which elicited information relative to cooperative learning, and they participated in whole group "thinking skill" lessons.

The teacher researcher monitored the class as the groups engaged in their tasks in order: to ensure that groups remained on task; to determine if any problems existed with directions or social skills; and to listen to discussions to assess learning taking place. A stationary camcorder also recorded during this time to enable the researcher to give primary attention to individual groups without missing other, possible significant, events.

The research site for teacher observations was a large classroom where students sat at long tables with four to six students at each table. There were four different classes of students who participated in the science investigation sessions. The first two classes (a total of 57 students) met for six weeks in the fall, one class in the morning and one in the afternoon. The last two classes (65 students) met mornings and afternoons in the winter. About 30 of the students were in both sessions.

Student Interviews

Twenty-three of those students were interviewed further. The first six were selected randomly. The remaining seventeen were selected because they had expressed some reservations about group work or because they seemed to have some difficulty working in their groups.

Teacher Interviews

Teacher participants were those who had student participants in their home school classrooms and indicated that they used cooperative learning as an instructional technique. Thirty-three teachers were contacted initially to find out if they utilized cooperative learning; seventeen responded positively; twelve of those (based on availability) were interviewed.

Limitations of the Study

The study was subject to several limitations. Because the researcher was a full time employee of the school district, access and time for observation were limited. The researcher experienced some personal role fragmentation between that of researcher and that of teacher. Time could not be devoted exclusively to research--helping students to understand the material presented was of primary concern. Although a camcorder was used, panning the room occurred infrequently, and some interactions went unnoticed. The microphone was not good enough to always distinguish conversation from general noise, and some detail was therefore lost.

While the researcher had a classroom at the pullout site where conditions (such as types of cooperative activities and appropriate use of cooperative learning components) were controlled, home school experiences depended upon understandings that may have differed from her own. In addition, the researcher asked a number of classroom teachers for permission to enter the room to observe students working in mixed-ability cooperative groups. Responses were typically, "Sure, any time--" until an attempt was made to set a specific time. Then there was such a unanimously hesitant response, the researcher assumed that her role as a district cooperative learning trainer might have been somewhat intimidating to teachers she may have trained.

Findings

Findings are reported in five sections: observations of the teacher researcher, results of the thinking skill lessons, the results of the student evaluations, results of the student interviews, and results of the teacher interviews. Themes and patterns drawn from all the data are then presented.

Observations of the Teacher Researcher

The researcher reviewed the video tapes and field notes of the science investigation lessons. These lessons were active and interactive in nature--subjects included aerodynamics (making and flying paper airplanes), surface tension (water drop and bubble experiments), kaleidoscopes, air pressure, and color and light (making color wheels and attaching them to drills). The lessons asked for whole group input on answers, provided one set of instructions and materials per group, and required each member of the group to perform a specific task (read directions, get materials, or record information for the group). Lessons lasted from 75 to 90 minutes.

Observations were initially put into categories of "What I see" and "What I hear." As data were examined, observations were further classified. Examples of "What I see" were put into categories of appropriate behavior, and inappropriate behavior. "What I hear" was divided into appropriate conversation and inappropriate conversation. The terms "appropriate" and "inappropriate" reflected the degree to which the observer believed groups followed directions.

What I see

Appropriate behavior. For the vast majority of the time groups appeared to exhibit appropriate behavior. At the beginning of each activity students leaned toward one another and put their heads together, apparently over directions. Several looked

over the reader's shoulder. The majority of the students interacted with their group members for most of the activities--they watched each other, listened to directions, waited for the "gofer" to get materials. When the activity required two hands (holding bubble frames so partners could try to put their hands through the bubble or holding pieces of cardboard for a kaleidoscope so they could be taped), help was given. Smiles were seen quite often, and heads nodded in agreement. Eye contact among group members was frequently noted

Inappropriate behavior. In an occasional group, students did not appear to be interacting but seemed to be absorbed in their own work. As the researcher approached, group members would bend their heads together. One group in particular seemed to experience difficulty during each lesson. While directions were apparently read, activity did not indicate that much discussion or clarification took place. The researcher stood or sat by this group more than any other.

Overall, as activities became more "active," the "cooperative" nature of the task was not always apparent. For example, when the students began to fly their airplanes, they looked like individuals with lots of others watching. For some of the bubble and color wheel activities, individuals seemed to be quite absorbed. After they had finished, though, they were observed showing their "creations" to others in their groups.

What I hear

Appropriate conversation. Comments deemed appropriate by the researcher were related to the academic task, expressed enjoyment, or were complimentary in nature. Also considered appropriate was the frequent use of one another's names during the activities and laughter during the "finding out" portions of the lessons. Every lesson began with a student in each group reading the directions.

Clarification was often requested ("What does this mean?" "How do we do that?"). Predictions were frequently heard ("What do you think is going to happen when we do this?" "Now what do we think will happen?").

Students described what they were doing. "I have a trained bubble--it does flips! Watch!" "It's like bobbing for apples." "It's like a trampoline!" "We figured out a way to make more bubbles--watch!"

Enjoyment of the activity was expressed. "Wow!" was a frequent response, occurring many times throughout each lesson. Compliments were heard. "Here you go." "Thanks." "That's really good." "That's neat--you're making a darn good plane."

Inappropriate conversation. "Inappropriateness" was denoted by tone of voice as well as actual words spoken. Since groups members were instructed to clarify and explain for one another, over-reliance on the instructor was also considered to be inappropriate.

Very few examples of inappropriate conversation were noted. A couple of off-task comments referred to football games played over the weekend, and one student asked another, "Do you know what you'll get for Christmas?"

Only one student called the name of the teacher frequently (several times per lesson)--she asked for reassurance that her group was "doing the right thing." "Mrs. S., is that what you want us to do?" was heard often.

Virtually no "tattling" occurred, and only two "put downs" were heard over the course of the observations. Some comments were made in tones of voice that seemed to imply a "put down" attitude: "I'm supposed to read, not you." "I'm not the checker--he's the checker." "That's not the way to do it. You do it like this. I know what I'm doing."

Teacher behaviors and conversation.

Video observation indicated that the teacher circulated among groups. During each lesson, the teacher was heard interrupting the class two or three times. Each time, she reminded students of the purpose for the lesson ("Don't forget to predict!"); to look at the directions again ("Don't forget to observe what happens when you fly your planes!"); or to offer suggestions or observations of other students ("Crease the kaleidoscope cardboard and tape it securely so the beads won't fall down the sides!").

At other times the researcher intervened in the activities of individual groups. One group of students seemed to require more of the teacher's attention than any other. It was clear that this one group had a great deal of difficulty reading, comprehending, and following directions. Furthermore, they seemed to lack the skills required to ask for clarification or admit confusion.

Results of the Thinking Skill Lessons

Students at the pullout site were familiar with the CoRT Thinking (deBono, 1986) series. The researcher used cooperative learning as the subject for two of the CoRT lessons--Plus, Minus, Interesting (PMI) and Rules--taught during the time of the study.

A PMI lesson is intended to teach students to examine all sides of an issue so that well-informed decisions can be made . Groups were asked to make a list of the positive attributes ("pluses") and negative attributes ("minuses") of cooperative

learning. Because of these directions (to list both kinds) the number of responses within each category was fairly equal. A third category included attributes of cooperative learning which fit neither category but were considered by the group to be "interesting."

Pluses. Positive attributes of cooperative learning fell into either the "social" category or the "help with work" category. Some of the social attributes listed were: "It's fun;" "You can talk;" "It teaches teamwork;" "You can make new friends;" and "You get to work with each other."

Some "help with work" responses were: "More ideas are offered;" "You get more done;" "You get help" and "You can help others;" "You learn more;" "If you don't know the answer others might;" "Everything doesn't have to be done by yourself;" "You can share knowledge;" and "You can compare answers."

Minuses. Negative attributes of cooperative learning were mostly in the "social" category. Students expressed concerns that they may not like the other group members, some people are hard to get along with, and group members may get bored with each other. "Noise" was mentioned several times along with the potential for arguments, lack of agreement, or unwillingness to cooperate. Another minus was offered that was not social in nature: "If it's wrong it counts for the whole group."

Interesting. Only four group answers demonstrated the "value-free" nature of this part of the PMI lesson: "Some people have never done [cooperative learning] before," "Different grade levels get to work together,"
"Some people like it and some people don't," and "Some people [in the group] have more success even when they are all working on the same project."

When the activity was completed and the list of PMI's were on the board, the teacher attempted closure. "To find out whether an activity would be better as a group activity, should I count the number of responses on each list?" The unanimous response was "No." The teacher asked why not. "Because some of the things on the lists are more important than others, so you have to look at it that way" was the answer.

The CoRT "Rules" lesson was a logical sequel to the PMI. After all sides of an issue have been examined, rules for its implementation should be established. Again, "the issue" chosen by the researcher for this lesson was cooperative learning. After conducting two PMI lessons discussing the pros and cons of this learning strategy, the class was instructed to develop a set of rules for students working in groups.

Each group made a list of rules which were then combined into a class list. The starred rules are those the class agreed would be rules regardless of teaching or grouping strategy.

Don't talk when someone else is talking.

*No horseplay, rowdiness, or running!

No copying other groups.

Everyone participates.

No arguing.

*Don't yell.

Quiet voices.

Let everyone that [sic] wants to say something say it.

*No profanity.

Respect each other's feelings.

No one does all the work

At the conclusion of this lesson, the teacher questioned the students' "no arguing" rule. "Is arguing always wrong?" she asked. "No," explained a boy. "You shouldn't argue to be mean, but you can argue about the things you're talking about." The teacher continued, "You mean, it's okay to defend your position?" "Sure" came from several students while others nodded.

Results of the Student Evaluations

Two kinds of student evaluations were used in this study. Group evaluation forms (Appendix B) were completed at the end of two lessons, and individual forms (Appendix C) were completed at the end of each unit.

Group evaluations. A total of 24 group evaluations were distributed with the directions that all responses to each question be recorded. Students were not required to come to consensus on any answer but were told to discuss the questions and generate answers. Two questions were related to group work. The first was, "What did you enjoy about working with a group on this project?" The majority of group responses made a reference to help. Some groups appreciated getting help, others enjoyed giving help, and six groups liked it "when peers help each other." Another group liked group work because "you can ask others questions."

"Fun" is a word that showed up on 14 group evaluations. Related responses indicated enjoyment of talking with peers. Two other responses to this question were stated simply: "Everything."

Nine evaluation responses mentioned "getting done faster" as a positive consequence of group work. One specified that in groups "the work is spread out evenly."

A number of groups mentioned that they learned from seeing others' experiments. Others specified "more thinking" and "getting to talk out your answers" as being benefits of group work. One group stated that the group provided a "larger chance of being right."

The second question related to groups was, "What would you have liked better about working alone?" Seven groups responded to this question with one word: "Nothing."

Four other groups responded that working alone would prevent having to wait for others to finish and two said they would not have to wait to use items.
Three noted that "you could have gone faster" individually. Three more indicated that when you work alone "you get your own way."

Two groups answered that individual work would have eliminated arguing and complaints. Several noted that there would be less noise. One response was that individual work would allow less confusion, and another said there would be no opportunity to confuse each other.

Individual Student Evaluations

Individual student evaluations were distributed by the teacher researcher on the last day of each session. A total of 116 forms were completed and returned (54 from the first session, 62 from the second). Thirty students were in both of the science investigation classes. Two questions on the form dealt explicitly with group work.

"What did you like best about working in groups?"

Help with assignments. Getting help with assignments was mentioned by nearly two-thirds of the students in response to this question. Having more ideas, input, advice, minds, and opinions from more people were ways of getting help. One student wrote that he liked "the freedom to confirm what you did and make sure it's right," and one stated simply that "you get to learn more [in groups]." One suggested that "you could ask them [group members] questions instead of the teacher." "Getting work done faster" was mentioned six times.

Other Social issues. From the 116 evaluations examined, twenty three responses were related to social issues. Some students stated that "you get to learn at the same time (together)," others noted that they enjoyed the opportunity to get to know

people better, two stated that "you aren't isolated", and one liked learning more about teamwork. Others cited enjoyment of being in groups with friends and making new friends. Three liked conversations best.

Miscellaneous responses. Other responses indicated what students liked best about working in groups. "Everyone had a chore so the work was spread out evenly." "You don't have to do everything yourself." Two students enjoyed "doing different things." One "loved everything" about groups, one wrote, "I could copy," and another liked "talking about stuff that doesn't have anything to do with the topic!"

"What would have been better about working alone?"

Speed of task completion. The speed with which students could complete assignments alone was cited by twenty-four students. Most responses were general, such as "You wouldn't have to wait for others," or "You could work faster by yourself." A few were more specific: "At times I thought it would be [better to work alone]. The reason why is some of the people in your group would get ahead and not make predictions," and "I'm faster than some of them, and they slow us down."

Noise. This was the category receiving the next greatest number of responses. "Noise," "less talking," or "less confusion" was the reason cited by seventeen students as the reason why working alone would have been better than working in groups. Two students claimed, "I would have some peace and quiet," and one noted that "you could get along to other experiments without waiting for the people who goof off."

Social issues. That there would be no arguing, fighting, fussing, complaining, or "others telling you what to do" was mentioned by thirteen participants. There were additional comments: "I wouldn't have to share," "I wouldn't have to beg for a prism," and "I wouldn't have to keep on asking for something that no one would give me." "You get more done, and you wouldn't have to mess with others" was written by two students. A related comment was that "people wouldn't get in your way." Working alone would cause fewer interruptions according to two students.

Nothing. Fourteen students wrote either "nothing" or "nothing at all" in response to this question of what would have been better about working alone. Another student wrote, "I wouldn't want to [work alone]." Still another noted, "It would have been boring."

Academic issues. Related to the academic portion of the task, several students responsed to the question: "You would only have to write one prediction [instead of those from the whole group];" "You wouldn't have to explain so much;" "You could

learn more;" "It could be more challenging;" "You would get credit for everything done right;" "You could use your own opinion;" "I learn better by myself;" and "You could use your own ideas." Some students said that they could "find out" or "discover" by themselves, and others said that they "could have done each experiment [instead of watch others work]."

While two other questions on the evaluation form made no mention of groups, they allowed an opportunity for "groups" to be included as part of the answer. "What would you change to make this adventure more interesting or challenging?" No students mentioned "eliminate groups" in their responses. Thirty students gave identical answers to the question: "Nothing." To the question, "What did you like best about the [science investigation] adventure?" one student responded, "We get to get in groups." Another stated, "Not having to be right all the time."

Results of the Student Interviews

Twenty-three students were interviewed individually by the teacher researcher. According to the student interviews, all academic subjects were taught using cooperative learning--but not all subjects in every classroom. The range of frequency for using cooperative learning was from once a month to several times a day. The most frequent response was several times a week.

The interviews consisted of four open-ended questions, allowing the researcher to probe for additional information. All were told that the questions were based on their home schools experiences because the pullout experiences had already been discussed.

"Do you know what cooperative learning is?"

This question elicited eight "yes" responses. The remaining fifteen students said, "No" or "No, not really." When those fifteen were queried further, all responses were affirmative. Answers to "What can you tell me about cooperative learning or group work?" referred to procedures, references to helping, and the social aspect of group work.

Tell me the good things--what you like--and the bad things--what you don't like--about cooperative learning.

Positive responses cited academic benefits, positive social issues, and ease and speed of assignment completion. Negative responses to cooperative learning included: negative social issues, differences of opinion, ease and speed of

assignment completion, and miscellaneous items. All students except one answered the positive part of this question first.

Academic benefits. Nearly two thirds of the students noted some type of academic benefit of cooperative learning groups. "Three people's brains are better than one" and "You get to share ideas and opinions and hear what other people think" were typical responses. Another student noted, "It's a good idea because it lets you learn from your peers instead of just the teacher who already knows everything."

Positive social issues. "Help" may be considered either a social or an academic issue, but the researcher considered "willingness to help" and "willingness to ask for help" to be primarily social. A majority of the participants gave "helping-related" responses. Over one-third of the participants liked being able to help others if they needed it and two responded, "You actually get to help each other."

"Getting to work with others" and "It's easier to get to know each other" were mentioned by several students. Other social responses were: "You get to know what's going on around you." "Sometimes the most unpopular kids aren't left out." "It makes you a better listener." "It's fun!"

Ease and speed of assignment completion. Several students noted that cooperative learning makes it "...easier and faster to learn because you talk to each other." Two noted it is easier to learn things you do not understand when you work in groups.

Negative social issues. Most negative responses were related to social problems. About a fourth of the students mentioned talking. One boy said, "If someone is goofing off, it slows down the group and we get a bad grade." "Getting off track" and "goofing off" were mentioned, and two said, "It gets loud and noisy." "Sometimes people in the group are rude. Sometimes they disrupt the group and get the whole group in trouble instead of just themself [sic]."

Differences of opinion. "If you have an idea you think is good, they don't," and "Sometimes you disagree or have problems with people" were representative responses. One student stated, "Sometimes people in groups can cause you to get worse grades or steal ideas and cause you to do all the work and they don't pitch in and do their share."

Speed of assignment completion. Several students felt that groups slowed them down. "It takes too long going around in circles." "Sometimes when you're going great you have to stop and help someone and it gets irritating." "Sometimes it really

bugs me to help others because some kids don't get it quickly. You have to really help and teach them basic stuff."

Miscellaneous responses. "When she gives us long papers it is hard to get together if you have activities after school." "Sometimes she gives us harder work in groups than we usually do. ("Is that work easier to do in groups?" the researcher wondered. "Yes, very easier [sic].") Two other students responded that there wasn't "really anything" they did not like about cooperative groups.

You are obviously bright. Do you ever work in groups with students who aren't as bright as you? If so, tell me how this works.

A typical answer was, "She puts two smart and two lower-level--not dumb, but slower learners--together." All participants had some experience working with students "less capable" than themselves. The majority of the students indicated that they did not mind working in groups with students who were not as bright as they were. Responses included:

"It doesn't bother me because I usually give hints. If they flat out don't know, I help--they look it up and I tell them if they are right. " "It just shouldn't matter who you're with just as long as you get the assignment done." (This student also said that she did not feel others depended upon her for answers or relied on her because of her intelligence.)

"No, because I can teach them if they don't understand." The researcher asked, "Do you like that?" "Yeah." The researcher continued, "Do others count on you too much?" "NO! There are lots of bright kids in my class--about ten." (This class had two identified gifted students, according to the teacher.)

"If you're smarter you teach them more." "Is that OK with you?" the researcher wanted to know. An affirmative nod was the response. "Do they depend on you for the answers?" "Sometimes." "Do you ever get help from them?" "Yeah, sometimes they'll find an answer we [sic] don't."

"It's not a problem. I usually wait for them to finish. If it takes awhile, it just takes awhile."

"Ability level doesn't matter to me because some kids understand some things but not others."

"It's a good idea. I think you put those who don't work well with those who do so that they can rub off on you. Mix levels--put better readers with not-so-good readers so they can help. I don't mind 'cause I like to help."

Other students "did not mind" being placed with less bright students, but added conditions. "I don't really mind, except when you share good ideas and they don't get used." "Does that happen often?" asked the researcher. "Not really."

"It doesn't bother me at all, but it slows the group down."

"Some kids sit and let me do all the work. If there are questions, they [ask me]. Sometimes that bothers me when they interrupt."

The researcher asked one bright girl, "Do you ever have to explain anything to other students?" "Yes." "Does that help you in any way?" "Oh yes--I have to really think about how I do the problem."

One gifted boy gave the only response that was completely negative. "I don't like [working in groups with kids who aren't as bright] at all. Do you want an example?" The researcher nodded. "Well, one time I did almost the whole thing. They got credit and got to take the paper home." The researcher asked if that happened very often. "Yes." (His teacher described him as a terrible group member unless he was the boss, and the principal in his building expressed her opinion that he seldom did enough work to get credit for anyway.)

<u>If you could decide whether or not to have your class work in cooperative groups, would you use them</u>?

All students except one (and not the one just mentioned) indicated that they would have their classes work in groups--at least sometimes. They offered suggestions about appropriate topics and grouping assignments.

Representative answers were: "I would decide to have kids work in groups because I remember that saying, 'two heads are better than one.'" "Do you believe that?" asked the researcher. "Yes."

"Yes, but not all the time. Just sometimes on big projects like essays and research papers...." "Yeah--for things you build because you don't have enough resources and things would get done quicker."

"Yes. Some kids are slower, so I wouldn't put them with exceptional students, but students a little slower [than exceptional]...."

"I would use [cooperative learning] all the time 'cause it's fun and you learn lots more. If you do it, you will probably get a good education and get a good job some day."

"Mix up some smart and some others so the low group won't feel bad."

One student gave an outright "no." He said, "When we were doing a reading

assignment, one girl wouldn't stop talking." "Is that girl bright?" asked the researcher. "Yeah--she goes to [the pullout program]." The researcher wondered, "Oh--then there could be a problem with kids who are bright as well as kids who aren't." "Yeah."

Results of the Teacher Interviews

Teacher interviews began with a reminder that the researcher contacted teachers at the beginning of the school year to ask if they used cooperative learning in their classrooms. All respondents indicated that they did use the practice, at least part of the time. The researcher then told teachers that she was interested in gathering some information about how their gifted students work in groups.

How do you group your students?

Ten of the twelve teachers interviewed considered students' academic abilities when assigning groups. For most assignments they mixed student abilities, placing one high, one or two medium, and one low student in each group. All participants used random grouping for some assignments, and the majority provided their bright students with opportunities to work together. Two specified that their gifted students occasionally enjoyed working alone when the rest of the class participated in group work, and these teachers honored that preference. The two who did not consider academic ability for grouping used random grouping for all group work.

What kind(s) of activities do you use cooperative learning for?

Eleven teachers indicated that they used cooperative learning for all subjects. Of those eleven, three particularly liked science and social studies because of the discussion involved. Two others used groups a lot for teaching writing. One teacher used cooperative learning for social skills lessons and short activities only.

What do you notice about your gifted students as they work in groups? / How do they seem to respond in group situations?

A sixth grade teacher with four identified gifted students (two boys and two girls) in her class gave an answer that seemed to speak for all other teacher participants: "These four are "as different as day and night." One girl was quiet and shy--"a model student." She worked exceptionally well regardless of the group makeup. The second girl worked well with her friends. The teacher believed that she perceived her friends to be bright, though they were not really her ability peers. She did not interact well with new students because she appeared to resent the "helper" role. This same girl worked well, however, with a learning disabled gifted boy in her class. This boy "typically" liked to control others. He didn't want to agree with others, but wanted to

make all decisions. He resisted listening to others and had difficulty giving the proper respect to his group members. While he worked with this gifted girl,such behaviors diminished somewhat according to the teacher.

The fourth gifted student in this class had a great deal of difficulty staying on task regardless of his group. He often worked better by himself because he got frustrated when he had too many things to finish or had to be agreeable.

Descriptions such as these occurred in every teacher interview, with no clear pattern presenting itself. A few gifted students were described as demonstrating leadership ability in their groups, but most were not. One student followed the lead of others in her group unless the topic was of great interest to her. A second student was described as displaying no leadership. He had many academic areas of struggle, and often seemed to feel inferior. Her third identified student showed some leadership when in groups with no "strong personalities." When these three students occasionally worked together they enjoyed their interaction, but produced work no better than average.

Some students volunteered to work with students who have difficulty reading, some did not. Most gifted students liked to work alone at times, and all teachers indicated that they provided such an opportunity.

Gifted students enjoyed working with their gifted peers, but also enjoyed interactions with less bright students (as indicated in the student interviews). Other students liked and enjoyed working with the gifted students in these classrooms--especially when gifted students also asked for help and made mistakes. The teachers described most of their gifted students as being very well-rounded.

One teacher with four identified students in his class reported that "nothing stood out" about his gifted students working in cooperative groups. He said that they sometimes dominated their groups, but no more so than other students with "dominating personalities." They appeared to enjoy cooperative learning (depending on the lesson) but neither more nor less than the other students in the class.

A fifth grade teacher with three gifted students initially said that he "didn't really notice anything" about these children working in groups. He then noted that one boy "doesn't like sharing his knowledge. His attitude is one of 'I know how but I don't want you to become as smart as me.'" A different gifted boy "overdramatizes." He "has to be in charge or he complains constantly," and usually gets his way with the group because he is the "undeclared class leader." The gifted girl was described as "...very

helpful. She takes charge and the other kids let her because they are smart!" She experiences great difficulty, though, when a mistake is made in her group. "She accepts responsibility for the mistake--she does it more to herself--and is devastated."

One teacher noted some problems for two of her four gifted students when they worked in groups with non-gifted students. "It can be very difficult for them--they don't understand why other kids don't see what is obvious to them." They don't like repeating directions, and they don't like to ask anyone (but the teacher) for help. In fact they can "tend to be loners" unless made to work in a group. They would "rather do the work by themselves and get it wrong than ask someone considered 'lower' in ability for help," according to this one teacher.

Themes and Patterns

Data collected from all sources (observations of the teacher researcher, thinking skill lessons, student evaluations, student interviews, and teacher interviews) revolved around two general themes related to cooperative learning: academic benefits and concerns and non-academic benefits and concerns. These same categories were mentioned in the introduction to this study and remained consistent throughout.

Pattern of academic benefits and concerns. "More ideas" was the most frequently mentioned academic benefit to the use of cooperative learning. Added input and point of view was mentioned in virtually all data sources .

There were several statements indicating academic concerns with cooperative learning, but no clear pattern was apparent throughout the data.

Patterns of non-academic benefits and concerns. Many responses supporting the use of cooperative learning used some aspect of the word "help." Responses related to "help" included: helping others, having someone to help you, or the two-way relationship of helping one another.

Enjoyment of cooperative learning was noted by a large majority of the participants and was observed by the teacher researcher. The distribution of work was considered an "enjoyable" attribute, as were smiles, laughter, and the word "fun" which was used many times in responses.

The issues of noise and arguments were found consistently in the data. While this may be considered an academic or a non-academic problem, the researcher placed it in the latter category, believing that the direct teaching of social skills may address both issues. The researcher realized, however, that academic work may be affected by excessive noise and/or arguments.

Summary. The emergence of themes and patterns from this study was consistent with the researcher's intent. Information was gathered from academically gifted students regarding how they felt about working in cooperative groups in both heterogeneous and homogeneous situations. Classroom teachers' perceptions about academic and/or social benefits of cooperative learning for their gifted students were gathered. The researcher believes that the findings of this study contribute to the literature surrounding the "cooperative learning with gifted students" controversy.

Discussion of the Findings

Observations of the teacher researcher. This portion of the study was included to address concerns of gifted advocates that little research has been conducted on gifted students working in cooperative groups (regardless of abilities of group members). Groups in this pullout setting performed consistently with groups observed by the researcher in her classes for the previous five years (four years in heterogeneous classrooms which included gifted students and one year at the pullout site for academically gifted students).

Group behavior was appropriate. Students followed directions and remained on task with very few exceptions. They worked together to interpret and complete the assignments. Each student in the group had a role to perform, and virtually every role was performed successfully. Conversations were largely positive. Words of encouragement, inclusion, and enjoyment were heard quite often. Clarification was asked for from time to time.

For the teacher researcher, a significant benefit of the conversations was that the results of her lessons could be heard immediately. As students discussed their work, the researcher could determine the extent to which understanding had taken place. As students made discoveries they were immediately shared. When viewing the video it was clear to the researcher that listening to the classroom conversations allowed immediate attention to social or academic problems. It was possible to give praise and support for appropriate behavior and academic success as they occurred.

Some problems were also noted by the researcher. The noise level rose as the lessons progressed. This may have been due to the active, hands-on nature of the assignments, but certainly working in groups allowed more talking.

The teacher researcher was heard clarifying directions and expectations more often than she would have liked. Perhaps more time invested at the beginning of the lessons would have obviated so many interruptions.

During the two units, several students were not participating with their group members. They did not seem to take part in conversations, and they seemed to wait for others to direct them. That some students were shy and/or non-assertive may have been the reason for the lack of expected group behavior, but participation is the cornerstone of cooperative learning.

Results of the thinking skill lessons. Students cited many of the same strengths and weaknesses of cooperative learning found in the literature. The PMI lesson resulted in student comments that cooperative learning is fun, teaches teamwork, includes everyone, lets kids work together, provides more input, and lets students give and get help.

On the other hand negative aspects of group work were seen. Noise was mentioned numerous times, and the occurrence of arguments or disagreements were more likely in group situations.

The "Rules" lessons called for appropriate group behavior, which consisted of consideration, respect, and full participation. Elimination of inappropriate group behavior was also addressed: no horseplay, no copying, no arguing. The classes agreed that arguing was beneficial if there were disagreements about answers or points of view, but not acceptable out of "meanness."

Nothing in the thinking skill lessons was contradictory to observations or expectations of the researcher. Students demonstrated an understanding of the benefits and problems of cooperative learning as well as appropriate rules for its implementation.

Results of the student evaluations. Responses to these evaluations were effusive with references to the help and additional input available in groups. Students also indicated that group work is fun, and they appreciated the opportunity to make new friends and work together.

Many students felt that working individually would have helped to avoid having to wait for others and would have allowed work to be completed faster. Noise was again a frequent complaint of group work as were fussing and arguing.

The question "What would have you liked better about working alone [rather than in groups]?" was on both the group and the individual evaluations. The researcher considered it worthwhile to note that seven groups (of a possible forty) and sixteen students (of a possible 116) wrote, "Nothing" in response to this question. The question "What did you like best about working in groups?" (also on both evaluations)

elicited no comparable response. Every group and every individual had at least one positive comment to make about working in cooperative groups.

While noise and arguing were cited by student participants as negative attributes of cooperative learning, the researcher had reservations about these issues. That classrooms would be quieter without student interaction is obvious. The researcher wondered if noise were a real problem for the students or if they gave an "expected" response. At no time did noise appear to be "out of control," and the researcher did not notice that it impeded completion of assignments.

The researcher asked a peer to view the video tapes to look for "any problems relating to noise." It was pointed out that the noise level rose after the lessons were well under way (the researcher also noted that), but at no time did the students appear to be handicapped by excessive noise. Furthermore, in no teacher interview was noise mentioned as a problem with cooperative learning.

The researcher had similar reservations about the "arguing" responses. During the "rules" lesson, students stated that it was wrong to argue in a mean way, but arguing to defend a position was okay. The researcher wondered if students <u>really</u> believed arguing to be acceptable under any circumstances since such a point of view was not expressed on any student evaluation. She also wondered if students clearly differentiated between "arguing" and "defending an answer."

Listening to students explain reasons for their answers is one of the reasons the researcher has used cooperative learning for six years. She has noted that when students clarify and defend their answers, more carefully constructed answers were produced. The researcher agreed with Kohn (1992) that not only does cooperative learning permit conflict, it actually relies on some measure of conflict for its success.

<u>Results of the student interviews</u>. This portion of the study was included to address Robinson's (1991) charge that research literature does not contain information about how gifted students feel about working in cooperative groups. The responses of a few students demonstrated compassion for others and an understanding of human nature. "Sometimes the most unpopular kids aren't left out;" "It makes you a better listener;" and "Ability level doesn't matter to me because some kids understand some things but not others." These were the kinds of responses the researcher hoped to encounter. In these cases, it is doubtful that cooperative learning shaped the feelings expressed, but perhaps it encouraged the students to articulate them.

The students, for the most part, responded that they did not mind working with less capable students, and several even cited benefits. Students noted that sometimes others knew more about a particular topic, and that explaining an answer brought greater understanding of the process.

Two of the students interviewed were chosen because the researcher had noticed problems with their group behavior. One of them gave the only totally negative response to the question about working with students of less ability. "I don't like it at all," he stated. The researcher had observed him working in groups for a year-and-a-half, and noticed that he did not work well with gifted peers, either. He was a student later described by his teacher as having "to be in charge or he complains constantly." The researcher concurred.

The second student with problematic group behavior was on medication for hyperactivity and had been diagnosed as learning disabled. He was often observed away from his table, talking to friends not in his group. He, too, liked to be "in charge," and he exhibited some showing-off types of behavior. It was not evident whether his behavior was related to his learning disability and/or hyperactivity. Although his home school teacher described his behavior as "improved" after working in a cooperative group with an especially helpful girl, he was the only one who responded that he would not have the class work in groups if the decision were his alone.

Even though all students interviewed were gifted, all said that cooperative learning provided more input into group answers and that all students could give and/or receive help. Only one student mentioned that helping someone else was a problem when it interrupted her own work. The rest of the "helping" responses were positive. No student responded in any way to indicate that he or she felt like a "junior teacher."

A number of restraints were attached to the use of cooperative learning as perceived by these gifted students. If it were up to them to set the conditions for group work, they would not use it all the time, they would carefully structure group composition (some would have friends in groups, some would not; most would mix abilities, though not at the extremes), and they would use it when discussion was called for. The researcher found it interesting to note that these same conditions are cited in the cooperative learning--and gifted--literature. The researcher also wondered whether negative experiences with this instructional tool had prompted these answers.

(She did not probe the answers further because she did not want to compromise any feelings of loyalty students might have had for their teachers.)

Teacher interviews. With only two exceptions, the researcher felt that the teachers were somewhat wary of her questions. The researcher had high visibility in the district with regard to cooperative learning and was responsible, in fact, for the training of several teacher participants.

Responses, however, were helpful. Students in these teachers' classes participated in cooperative learning groups in quite individual ways, similar to the non-gifted population. Some students displayed leadership, some did not; some tended to take over groups, some did not; some exhibited significant academic ability and confidence, some did not; some worked well regardless of group composition, some did not; some were task committed, some were not.

Teachers, for the most part, were aware of the "giftedness" of their students, and demonstrated accommodating behaviors. Several allowed their bright students to work together at least part of the time, and several allowed them to work independently when warranted. One teacher grouped her students so that those with extremely different ability levels were not in the same group. Several stated that the activities for which they used cooperative learning were chosen to develop social skills or to encourage discussion and elaboration of subject matter.

Conclusions

Data analysis by the researcher supported the "hunch" with which she began this study: cooperative learning, when properly implemented, is a viable practice for use with gifted students in heterogeneous or homogeneous situations. Support for this hunch was contained in all sources of data. Students observed in cooperative groups demonstrated social and academic behaviors cited in cooperative learning literature: tolerance for differences among people; acceptance of different opinions; and elaboration and support of answers given. Certainly room for improvement in these areas was apparent in many instances.

The researcher found no evidence to support Feldhusen's (1990) fears: "...severely lowered achievement for all students at all levels of ability;" gifted students used as assistant teachers; or gifted students denied challenging learning opportunities. While one of his concerns was observed--gifted students working at a pace determined by the group--this was seen in groups of like-ability students as well as in groups of mixed-ability. The researcher considered

the possibility that this was not necessarily a negative occurrence. Being "forced" to work at a slower pace could expose students to additional information, and could help to eliminate careless errors.

Critics cited by Yager, Johnson, and Johnson (1986) stated that neither the highest nor the lowest achieving students would learn from the other members of their cooperative groups. That claim was not supported by data collected for this study. Student participants indicated that they learned from non-gifted group members as well as gifted peers, and teachers noted that learning occurred among all ability levels. Some teachers said, however, that they avoided placing students at opposite extremes of abilities in the same groups.

Silverman's (in Willis, 1990) belief that the adoption of cooperative learning has "threatened to wipe out the gifted program" was not supported by this study. Cooperative learning was a main focus of this district's instructional program, yet support for gifted education was also quite evident (at least at the elementary level).

Based on data generated by this study, the author disagreed with Rogers's (1991a, 1991b) guideline that "mixed-ability cooperative learning should be used sparingly, perhaps only for social skills development programs." Appropriate social skills are an important part of the classroom structure because so many students arrive at school without them. Preparing students to work with a variety of others is also a goal of this school district and is, therefore, important. However, the researcher found that academic benefits of cooperative learning accrued to the gifted students in this study. Teachers and students noted the benefits they received from such grouping.

Robinson (1991) noted that neither the research literature nor the cooperative learning literature contained information about how academically talented students feel toward cooperative learning. While the present study was in no way exhaustive, and its findings cannot be generalized to all other situations, the conclusions are noteworthy. Students in this study were quite supportive of cooperative learning in general, and largely supportive regardless of ability-levels of group members. Issues such as friendship and personalities were also important to them.

This researcher agreed with Kohn (1992) that "...reducing hostility, improving social skills, promoting an acceptance of people from different backgrounds and with different abilities, and coming to view others as potential collaborators (rather than as obstacles to one's own success)..." are viable reasons to continue the practice of cooperative learning. Many of the students in this study demonstrated a need for

these skills.

Recommendations

Additional descriptive studies are needed to inform those concerned with the controversy surrounding the use of cooperative learning with gifted students. This author considered the most beneficial parts of this study to be the student and teacher interviews, and would recommend further research using just those two sources of data.

Based on analysis of data, the author of this study concurs with the recommendations of several other researchers. Teachers need to be responsible for making appropriate "common sense" decisions that will accommodate the needs of their gifted students. As reported by some teacher participants in this study, all teachers need to heed the advice of Fiedler-Brand, Lange, and Winebrenner (1990): make informed, responsible decisions to determine which lessons lend themselves to heterogeneous groups and which to homogeneous groups.

Gifted students appreciated access to their intellectual peers as evidenced by their interactions in the pullout classroom and teachers' observations when they placed these students in homogeneous groups. This finding is consistent with the suggestion offered by Winebrenner and Devlin (1991) to teachers who use cooperative learning in heterogeneous classrooms. Tasks that focus on discussion (critical thinking and problem solving) are appropriate for groups of mixed ability students. When tasks are those of drill and practice, gifted students should be working with peers on material at an appropriate level.

In order that responsible decisions about the use of cooperative learning can be fostered, this author recommends that whenever cooperative learning is a component of the instructional program of a district or even a site, extensive and comprehensive training be offered. Teachers without adequate training should not be expected (or perhaps permitted) to use the technique.

APPENDIX A

Davidson and Worsham (1992, p. xiii) examined the following diverse approaches to cooperative learning: "the principles approach of the Johnsons, the structural approach of Kagan, the student team learning methods of Slavin, the group investigation approach of Sharan, the complex instruction of Cohen, and the collaborative approach described by Brubacher, Payne, and Rickett." Davidson and Worsham identified certain key points in common among the diverse methodologies, and certain areas of difference.

The following critical attributes are common to all methods of cooperative learning:

* A task or learning activity suitable for group work
* Student-to-student interaction in small groups
* Interdependence structured to foster cooperation within groups
* Individual responsibility and accountability

The following attributes are found in some, but not all, approaches to cooperative learning:

* Heterogeneous or random grouping (or some other grouping procedure)
* Explicit teaching of social skills
* Processing social skills: reflecting on the way social skills were employed and on how their use could be improved in a future lesson
* Means of structuring positive interdependence (goals, tasks, resources, role assignments, rewards)
* Team building and class building to foster a sense of inclusion, cohesiveness, and common identity in the team or class
* Perspective taking: learning to understand the perspectives of others, even when these differ from one's own
* Status treatments designed to recognize the competence of low status students and to enhance their status in the classroom
* Shared leadership within groups
* Use of structures: for example, interview, round-robin, think-pair-share, jigsaw

Appendix B

(A processing sheet filled out by the group at the end of the lesson.)

****

COLOR WHEEL LESSONS

List all the answers your group generates.

1. What did you learn from this lesson (about colors, light, speed, etc?)

2. What questions do you still have -- or what else would you like to learn with regard to this lesson?

3. What did you enjoy about working with a group on this project?

4. What would you have liked better about working alone?

5. Where (in the world!) would the lessons learned from this activity be useful?

Appendix C

These are the questions asked on the individual evaluation sheets completed at the end of each unit. Both evaluations asked for the students' names, home schools, grades, and home school teachers.

*****

(Pullout) Evaluation - October-December, 1992

MAD SCIENTIST
Judy Stout, Instructor

1. What did you like best about the Mad Scientist adventure?
2. From which activity did you learn the most?
3. What would you change to make this adventure more interesting or challenging?
4. What other scientific concepts would you like to explore?
5. What did you like best about working in groups?
6. What would have been better about working alone?

*****

DON'T BELIEVE YOUR EYES
Judy Stout, Instructor
January 6 - February 10

1. What did you like best about this adventure? (Please be specific!)
2. From which activity did you learn the most? What did that activity teach you?
3. What would you change to make this adventure more interesting or challenging?
4. What other topics would you like to explore at (the pullout site)?
5. What did you like best about working in groups?
6. What would have been better about working alone?

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